Volunteer Firemen

JULY

1942

NATIONAL FIRE PROTECTION ASSOCIATION
60 Batterymarch Street INTERNATIONAL Boston, Massachusetts

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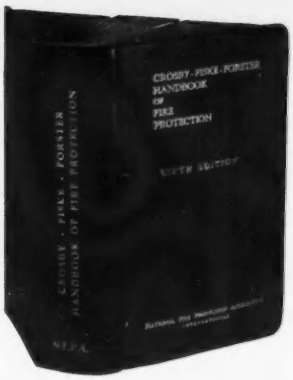

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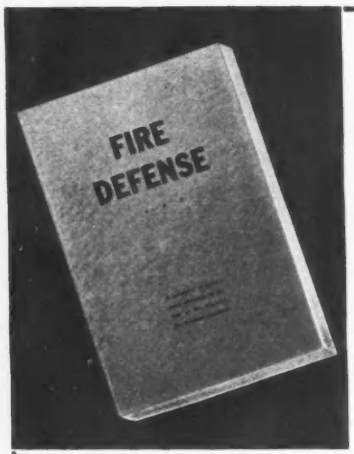

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(From an 8-page review of FIRE DEFENSE, written by former Chief Pordage of Edinburgh, Scotland, Past President of The Institution of Fire Engineers, a British organization.)

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Volunteer Firemen

Volume 9 Number 7

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BUY WAR BONDS AND STAMPS!

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WE ask the indulgence of our Canadian readers as we do a little flag waving on the cover this month. Many publications are similarly paying tribute to the American flag as a feature of observing the month in which falls our national holiday, July 4th. Canadians, we know, will readily understand, as they, too celebrate this month: Dominion Day, July 1st.

VEHICLES actually engaged in civilian defense or in rescue work involving life, health or property may be served gasoline without a card under the temporary rationing plan in effect in the eastern United States. This was announced by the U. S. Office of Price Administration. Regulations specify actual engagement in such activities, however, and do not permit civilian defense or other officials to make gasoline purchases by virtue of office alone. Only such amounts of gasoline as are essential to the performance of the activity for which the transfer is permitted may be purchased.

Regulations of the OPA allow also specifically supplemental gasoline rations when needed to members of volunteer firemen's organizations as well as to other organizations "solely" engaged in civilian defense activities under the supervision or direction of military authorities. Persons receiving training in such activities may apply at their local rationing boards for additional supplies of gasoline as well as those actually engaged in such work.

While the regulations mentioned above permit firemen to get essential gasoline to respond to duty, there is much that firemen as well as other citizens can do to conserve both gasoline and tires. In most cases several firemen living nearby might use one car when answering alarms. This would reduce the traffic congestion at the fire grounds or near the fire station and would save rubber and fuel.

The old habit of leaving fire apparatus motors running while the equipment is standing-by on the fire grounds also would seem to be out of order for the duration of the emergency. As soon as it is determined that motor equipment is not needed to operate either the booster or regular pumping unit, the motor should be shut off.

CHIEF Charles W. Alcorn of the Rosedale Volunteer Fire Department, Verona, Pennsylvania, (Member N.F.P.A.) reports that thirty members of that department have volunteered to be on duty several nights each month in order to have men instantly available to handle fire calls and operate the ambulance service. Schedules are arranged so that two men are on duty between 11 P.M. and 7 A.M. each night. Each fireman brings his own fire clothing when on night duty.

Chief Alcorn cites this extra standby service as an example of the desire of volunteer firemen to give more than the usual amount of time to their duties during wartime.

LAST month 7 departments with 83 men joined the Volunteer Firemen's Section for the first time. Forty-seven departments with 1,035 men renewed membership. This makes a total enrollment of 754 departments and 15,129 men. The following departments are newly enrolled:

Sanford Fire Department, Sanford, Maine.

Malden Auxiliary Fire Department, District 4, Malden, Massachusetts.

Tularosa Fire Department, Tularosa, New Mexico.

Guilderland Center Fire Department, Guilderland Center, New York.

Larchmont Fire Department, Larchmont, New York.

Vigilant Fire Company, Apponaug, Rhode Island.

Campbell River Volunteer Fire Department, Campbell River, British Columbia.

THE recent enrollment of several auxiliary fire companies in the N.F.P.A. Volunteer Firemen's Section suggests that perhaps the auxiliary firemen in your community might be interested in reading VOLUNTEER FIREMEN magazine regularly. Perhaps when it is time for your department to renew membership some of the auxiliaries might like to enroll to receive the magazine along with the regular firemen. The membership plan permits additional men to receive the magazine at a cost of a dollar a year per man.

Another plan would be to have the auxiliary group take out a separate membership in the Volunteer Firemen's Section and thus receive a complete set of the regular N.F.P.A. publications as issued in addition to their own 10 copies of VOLUNTEER FIREMEN each month.

A REVISED estimate of U. S. fire losses for 1941 has been released by the National Board of Fire Underwriters. The total loss for last year was placed at $303,895 000, or $2.29 per person based upon a population estimate of 132,818,005. The loss figure is based upon records of the Board's Actuarial Bureau, with thirty per cent added to cover unreported and uninsured losses. The figure indicates an increase of approximately 6 per cent over the adjusted figure for 1940.

The estimated U. S. fire loss for May, 1942, according to the National Board of Fire Underwriters is $23,233,000, a decrease of $2,404,000 from the same month last year. Losses for the first five months of 1942 were $9,072,000 above the same period in 1941. These figures are based on notices of incurred loss received by insurance companies, members of the board, plus an allowance for unreported and uninsured losses. The following table shows the losses for the first five months of 1941 and 1942.

	1941	1942
January	$26,470,000	$35,565,000
February	26,102,000	30,819,000
March	31,471,000	30,505,000
April	29,330,000	27,960,000
May	25,637,000	23,233,000
Total 5 months	$139,010,000	$148,082,000

American cities are much more likely to suffer attacks from the air than from the ground. Large numbers of combustible roofs assure an attacker using incendiary bombs much greater opportunities for destructiveness, than where the sky face of a community consists of fire retardant roofing materials.

FIRE FROM THE AIR

TOUGH roofs—not walls—make the modern fortress-city. For enemy planes, moving swiftly through the stratosphere, can ignore the once impregnable barriers of mountains and oceans, of walls and moats, to pummel their objectives with high explosives and incendiary bombs dropped from above.

Besiegement from the air, as a result, should be planned for by every community at war today, is the opinion of Major Alexander P. de Seversky, whose recent book, *Victory Through Air Power*, has been hailed by airman and layman alike. In it he describes a broad new air-war strategy to be conducted by an autonomous, independent air force.

"Just as medieval cities surrounded themselves with stout walls, vigilantly armed," Major de Seversky maintains, "we, too, must re-build and re-plan our cities, re-adjust our traffic and transportation systems, so that they and their people cannot be bludgeoned into ineffectualness by air attack.

"We well know that Japan's thinly stretched fabric of empire into the far corners of the Pacific can be torn to fragments the moment our airmen smash at the few great cities that supply and spark her extended lines.

"But few realize that we in the United States are far more vulnerable than the Japanese to the same kind of attack—an attack on our vital cities and homes. Japanese, driven from their homes and cities by aerial fire, can adapt themselves more readily to primitive conditions. Americans, heirs to generations of greater industrialized life and higher standards of living, are far more dependent on public utilities, transportation, a thousand industrial age gadgets for our survival. It is a curious paradox that the more industrialized a nation, the more vulnerable it is to dislocation and destruction from the air. In the war of the future—and as wars are fought today, that future may be tomorrow, next year, or five years from today—attacks by air on our home front may become a vicious, demoralizing, paralyzing strategy, designed to knock our industries and our workers out of the war, leaving our airmen, our soldiers and sailors far afield and without support.

"For this reason, we must measure true air power in terms of three factors: 1. Air weapons. 2. Productivity of industry. and 3. Civil resistance. Without factors two and three, it stands to reason that one must fail."

Major de Serversky, a Russian air ace in World War 1, and today one of the world's leading air strategists, is also credited with devising the first automatic bomb sight. An advocate of huge bombers, capable of carrying 50 ton bomb loads half way around the world, he pleads, too, for the development of less air-vulnerable cities. "It is not enough to establish balloon barrages and train air raid wardens. Today, every aspect of the nation's life is affected, directly or indirectly, by the advent of the new menace in the clouds.

"I foresee the time, in the very near future, when the appropriate Air Defense authorities will be called into consultation in connection with all construction, down to your home and mine.

"THE hazards of incendiary bombs are in many respects more serious to the average man than the hazards of demolition bombs. All housing hereafter is likely to take this new threat into consideration. Roofing materials, in particular, will be fire-resistant, to prevent the spread of conflagration by air-borne sparks. Structure and furnishings will be treated to reduce their fire-susceptibility and to confine fire to easily controlled areas.

"Places of public assembly which do not require daylighting— such as motion picture theatres, ballrooms and banquet halls — will be built underground to serve as natural air-raid retreats. This tendency may revert our architectural concepts so that "skyscrapers" will be built *downward* instead of upward.

"Our cities and industrial groups will be planned for rapid evacuation. The inadequate highways serving them must be increased and improved to handle any emergency exodus. And more important, along with this will

come a permanent 'residential evacuation' resulting from decentralized population.

"For in the next phase of the war, all of us will be combatants. The story, in the final analysis, will be told by the stamina of the entire population, town and country alike. And that stamina can be maintained only by the knowledge that we possess an agency capable not only of parrying the aerial blows of the enemy, but of striking at the enemy's heart and vitals—of destroying the *sources* of his strength.

"That agency is an autonomous air force, unhampered by the thinking of other military services, developed specifically to conquer and hold the skies not only above our own territory but above the enemy's territory."

Water Best Extinguishing Medium for Incendiary Bombs

THE subject of the proper method for handling incendiary bombs continues to be a matter of much interest and discussion. It may be recalled that the first instruction given in the methods of handling the small magnesium incendiaries, stressed the use of a spray on the bomb so as to permit it to burn out without causing a spattering of burning magnesium such as is likely to result when a burning bomb is struck by a solid stream of water. However, as a result of wartime experience the British Ministry of Home Security now recommends the use of a solid jet rather than a spray in dealing with incendiary bombs. They point out that the spray, formerly recommended, is still preferable if there is only a single bomb, but experience has shown that it is too slow where bombs are dropped in large numbers and many fall in a single building.

It has been found that the risk of injury by particles of molten magnesium scattered by a jet is not great because the solid stream permits attack on the bomb and resulting fire from a greater distance. This also reduces the danger of injury in case the bomb contains an explosive charge. In a number of instances, German incendiary bombs have contained explosive charges designed to go off just as fire fighters approach to extinguish the fire.

In any event fire defense authorities have frequently pointed out that the real danger from incendiary bombs is not from the individual bomb but from fires that may be started in combustible materials near which the bomb lands. Even if the burning bomb is not attacked with water it will eventually burn itself out provided the surrounding combustible materials are prevented from burning by the operation of fire fighting equipment. A recent letter by Major General L. B. Gasser, Chief, Protection Branch, Office of Civilian Defense, is of particular interest along these lines. General Gasser says:

"The OCD recommends only water for combating incendiary bombs. However, sand may be used to facilitate the handling of a bomb when it falls in places which are essentially non-combustible.

"There are many industrial products being sold as extinguishing agents for incendiaries. These include special powders, solutions, pitch materials, scoops, etc. Almost invariably, the cost of these items is exorbitant, and in most cases they are no better than sand. All of them are suggested for use on the bomb itself and neglect the most important problem of the fires started by the bomb. It should be clearly noted that there are many types of incendiaries and any equipment whose use is limited solely to the incendiary agent is not satisfactory. Therefore, the proper use of water against both fire and bomb is the best answer we have at this time.

"We should do all we can to discourage the purchase of all articles which do not provide adequate protection against fire, thereby endangering civilian lives by engendering a false sense of security."

The above advice directed against various impractical gadgets obviously does not refer to the proper use of special approved grades of pitch, "G-1 Powder", or "du Mag", approved by various testing agencies for use in extinguishing small magnesium fires in factories. But listing of an extinguishing agent for magnesium fires by Underwriters' Laboratories, Inc., or by Factory Mutual Laboratories does not mean that it is recommended for general use on incendiary bombs.

Dunking Bombs a Russian Extinguishing Method

WHILE most firemen doubtless are familiar with the usual technique of controlling incendiary bombs with small streams, another method is to "dunk" the bomb in a bucket or a barrel full of water. The Chicago Fire Department has developed a method for disposing of incendiary bombs in a bucket of water after the bomb has been first covered with sand to reduce glare and sparks. It is important that the bucket be filled with water so that the bomb will be completely immersed.

In an announcement sent to fire school instructors of Pennsylvania by Arthur W. Espey, Head of the Fire School, for that state, Mr. Espey points out that when the English went over to Russia to teach the Russians how to handle incendiary bombs, they found the Russians had a pretty good method all worked out. It consists in picking up the bomb in gloved hand and tossing it into a barrel of water. Mr. C. B. White, Chief Chemist, American-La France - Foamite - Corporation, and member of the N.F.P.A. Committee on Hazardous Chemicals and Explosives, decided to investigate this method. The following remarks are quoted from a letter on this subject written by Mr. White. It is important to note that the method will not work on magnesium chips:

"Until I tried it, I couldn't be sure that this dunking method would work, but having tried it, I am here to tell you that there is nothing like it. The bomb just says 'glub!' and it's out. What happens is that the magnesium is chilled below its melting point so suddenly that it no longer burns.

"If the bomb has been going so long it is too hot to handle, pick it up in some tongs and toss it into the water. Or if the bomb has been burning a long time so that the magnesium is a pool of molten metal, get a shovel under it and do the same thing. In this case, it is probably not wise to hold the metal too long on a steel shovel or the shovel will consist largely of a hole. Perhaps dry sand is best for a bomb that has quite thoroughly melted, although I have had good luck with the dunking method even on such.

"Please bear in mind that this method is *not* to be applied to chips of magnesium on fire. I have tried it and the chips are so light they don't sink right away and they spatter blue fire all over the countryside—no foolin'!

"Also bear in mind that there must be an abundance of water, enough to cover the bomb completely. Anything short of that is disastrous!"

WPB Bans "Demonstration" Bombs

THE production of "demonstration" incendiary bombs for civilian use has been banned by the War Production Board under Limitation Order L-115 because their manufacture calls for the use of scarce materials. Only permitted exceptions are to fill orders authorized in writing by Army or Navy. In addition to stopping production of incendiary bombs, the order prohibits all persons from selling, purchasing, delivering or accepting them.

All persons who have manufactured incendiary bombs or similar devices for demonstration purposes since September 1, 1941, except under authorization of the Army or Navy, must immediately report quantities and current inventories to the WPB on Form PD-449.

A DOCTOR JEKYLL AND MR. HYDE BLAZE!

BY EVERETT HUDIBURG,
ASSISTANT CHIEF,
FIRE DEPARTMENT,
STILLWATER, OKLAHOMA

Assistant Chief Hudiburg here reports an apparently routine sort of blaze that gave members of his department an unexpected beating. Incidentally, the blaze occurred within a block of the college fire station at Oklahoma A. & M. College which, as has been reported in VOLUNTEER FIREMEN, is the only college in the country having a course in firemanship. The Stillwater Fire Department is under the command of Chief J. Ray Pence.

THOUSANDS of fires occur each year, blazes that belch forth large volumes of black smoke, stopping traffic for blocks, driving many residents out of their homes, causing firemen severe "punishment"—yet not a thought of fear. A flame-belching, wall-crumbling blaze that brings motorists from miles around and convinces each one that he is lucky not to be a fireman, is the kind of blaze the fire fighters take with a grim determination. Yet, strange as it seems, with a few exceptions, the kind of fire which makes a fireman wish for something he doesn't have is usually the sort of fire that the civilian wouldn't walk across the street to see. The most innocent looking blaze may hold great danger for the firemen. In other words it may have a "Doctor Jekyll and Mr. Hyde" personality.

In the early morning hours of May 18, 1942, we received an alarm in our ultra-modern suburban business district. The building involved was a one-story structure, 50 by 90 feet, of practically new construction, having been built in 1940, and consisting of a 13 inch concrete block and brick bearing walls throughout, with a 36 inch fire wall. The south wall is a party wall, shared with a clothing company. The front of the building is finished with glazed tile, nullifying the possibilities of transom ventilation. The occupancy is a school supply store, known as "Miles Student Store," and is just off the campus of the Oklahoma Agricultural and Mechanical College. The first alarm assignment was dispatched, consisting of one Squad Company, two Engine Companies, and one Truck Company.

It was a fairly prompt alarm, and there was a fair blaze in the rear of the building, but seemingly nothing out of the ordinary. Even after gaining entrance to the front of the building the smoke was so nominal that none of the firemen considered using the gas masks available. The company coming in at the rear had difficulty forcing the door and the company on the roof was hammering away trying to ventilate over the fire. The roof of the building, laid on 2 by 14 joists, consisted of approximately 5 inches of roofing. No wonder the company on the roof was hammering. The company coming in from the front had no great amount of difficulty until they reached the concrete block partition, seventy feet back from the front door, separating the main store from the storage room in the rear. No water had been directed at this time, because the fire was still confined to the one store-room in the rear. Upon opening the swinging door to the store-room a terrific wave of heat and obnoxious fumes forced them back almost half way to the front door of the building.

By this time the roof was pretty well opened and the Engine Company had advanced from the rear. For some short time after ventilating the roof, hot gases burned over the roof. However, not much thought was given to this condition. Knowing the presence of super-heated carbon monoxide gas, which needs only a supply of oxygen to ignite it, and which it was receiving through the opening in the roof, we backed off and let the building clear itself.

Going down the ladder in the rear I found the fire was being brought under control. I also noticed four of the firemen working from the front of the building had donned gas masks. On out in front I went, not thinking of any danger that might be present, although I should have known those gas masks were there for a purpose. As I reached the front door I heard someone coughing and gagging, and also heard someone say in a loud voice, "Go in there and bring him out!"

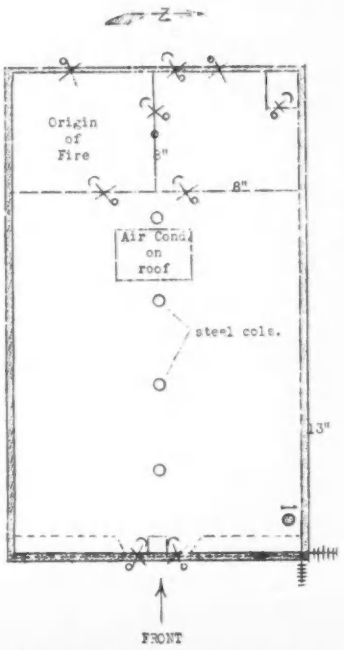


Diagram of the store where the fire described occurred.

"Who?" I asked in astonishment.

"The Chief," the answer came back, "he's been gassed!"

At that moment I felt the Chief brush by me, almost upsetting me as he crawled on the floor. Instantly I dropped to the floor and went hurrying after him. Catching him half way back, I argued with him to go outside.

"No, no!", he growled, patting the floor and rubbing the showcases with his hands. He was acting like a mad man!

"You're coming outside with me!", I snorted, struggling with his half-limp body.

"I've got to get him, I must, I must!", he said, and with that he jerked forward, throwing me completely off balance. With this effort he collapsed on the floor.

A thought flashed through my mind, a part of Paul W. Kearney's article entitled "Smoke-Eater's Menu," which was ". . . not only will they refuse to listen to reason and retreat when advised, but invariably they resent help with physical force."

"Could it be?", I thought. "Yes, it could be! *NITROUS FUMES!*"

One of the masked firemen and I carried the chief outside, and with the aid of the inhalator, brought him back in a short time. The Fire Department physician was summoned and he was making a thorough check-up of Chief's heart and respiratory system, when a report came that one of the other firemen had collapsed.

"Who is it now, and where is he?" I asked.

"It's Jim, and he's been taken across the street," came the reply.

As soon as he had been taken care of we found firemen dropping like flies, until seven were lying on salvage covers all over the sidewalk in front of the burning building.

The No. 2 Fire Station was less than a block away so all of our victims were removed to beds where they could be more comfortably attended. Then suddenly one of the firemen completely collapsed in bed. There was no sign of heart count, or of breathing. He was removed to the floor and artificial respiration was applied until the resuscitator was brought up from the apparatus floor, where it had previously been in use. Resuscitation was necessary for forty-five minutes before the patient would breathe of his own ac-

cord. Oxygen was administered for several hours afterward.

A special nurse was brought from the Municipal Hospital, and all of the ailing firemen were ordered to bed until released by the physician. The protests, "I feel fine, and want to get up," were ignored by the physician and nurse.

After a quick checkup of the burned portion of the building, we found that the proprietor had a large stock of drawing sets and other drawing supplies for the next semester school term. Due to war conditions such articles are not easily obtained. On the wall were marks where once had hung dozens of T-squares, triangles, protractors and other engineering drawing essentials. A sizeable number of fountain pens had burned, melted and fused in their racks and boxes. Pyroxylin plastics, commonly known as "celluloid," and other trade-names, such as "Pyralin," "Fiberloid," "Xylonite," "Viscoloid," and "Nixonoid" are all a part of nitrocellulose compound for making these plastics.

According to the National Fire Protection Association Handbook of Fire Protection, the burning characteristics depend upon the degree of nitration, the thickness of the pyroxylin article, and the amount of inert materials present and conditions under which combustion takes place.

When nitrocellulose products are heated to a temperature of 300°F, decomposition starts, which generates further heat and soon raises the material to its ignition temperature.

Various experiments have shown that the decomposition of 1000 pounds of nitrocellulose pyroxylin plastics at a high temperature forms 8500 cubic feet of gas. The volume of the gas, as well as the speed of its formation, increases with the temperature.

These gases of decomposition, in general, are highly toxic. We are aware of the effects of the carbon monoxide, but the toxic effects of nitric oxide, or nitrous fumes, is often delayed. Persons exposed to these gases may show no immediate ill effects, but fatalities may follow some days afterward.

It can be clearly seen that the firemen of today do not necessarily need to be in some factory or chemical warehouse in order to get into trouble. Under the proper conditions the typical dwelling house fire can be a very mean proposition. The firemen who fought fires twenty and twenty-five years ago have been known to scoff at the "student firemen" of today in their inability to "take it." If this is the case they are not taking into consideration the ever-changing conditions with an increase of hazards.

Art Espey, Head of the Pennsylvania Fire School, and No. 1 cartoonist of the American fire service, catches the spirit of an old-time fireworks celebration that will doubtless call back memories to many men in the fire service.

July 4th, Safe and Sane This Year!

THE old orgy of fire and noise is out this July 4th, thanks to the war. As has been previously reported in VOLUNTEER FIREMEN, a considerable number of states not having adequate regular fireworks control legislation have recently promulgated emergency regulations banning the private use of fireworks for the duration.

Fire and safety officials in several states where these wartime restrictions against the use of fireworks are now enforced report being very much encouraged by the public reception this safety measure is now receiving. It is felt that many localities will be encouraged to adopt proper fireworks control measures after the present emergency has passed in order that the use of fireworks may be limited to properly supervised public displays put on by responsible organizations. The latest state in which emergency action has been taken is New Hampshire where Governor Blood has urged the people of the state to forego the usual Fourth of July fireworks for the duration of the war. As both chief executive of the state and chairman of the State Council of Defense, he pointed out that under present wartime conditions the use of fireworks should be eliminated as a matter of cooperation with military and civil authorities; and as a matter of fire prevention, safety, and economy.

The Governor quoted a letter written by Major General Sherman W. Miles, of the 1st Corps Area, which stated in part: "Entirely aside from the question of blackouts and dim-outs, it seems to me that for the duration of the war the use of fireworks except for strictly military purposes is not advisable."

Governor Blood suggested that the educational and patriotic values inherent in the observance of Independence Day may well be maintained in ways other than the use of fireworks, and he recommended that the money thus saved be used to purchase war stamps and bonds.

Last month the Board of Aldermen of Concord, the capital city of the state, passed an ordinance prohibiting the use of fireworks until six months after the end of the war. Other New Hampshire cities that have banned fireworks by proclamation are Portsmouth, Rochester, Dover, Somersworth, and Berlin. The police departments of Manchester and Exeter have made it illegal to use fireworks this year.

Fire Hose for Defense

Never has the work of Underwriters' Laboratories, Inc., in Chicago, been of greater importance to the American fire service than at the present. This is well illustrated by the following story describing how the Laboratories met and licked the challenge presented by the need for serviceable fire hose conforming with the recent orders of the War Production Board which required a reduction of almost 60 per cent in the rubber content of hose. Cities and towns can now get hose carrying Underwriters' Laboratories' labels that under emergency alternate specifications substantially meet all the requirements of regular labeled hose. However, it is not expected that the emergency hose will have the long life of regular fire hose.

British Combine

Lots of fire hose is needed for fighting big air raid fires as shown by this street scene in London the morning after a serious raid. The rubber shortage caused by the war has made it necessary to develop fire hose using substantially less rubber than hose meeting pre-war standards.

MANY firemen, knowing the importance of fire hose in the fire fighting job, were rightly worried when the U. S. War Production Board early this year cut the amount of rubber which could be used in hose from about 17 to a maximum of 7 pounds per hundred feet in the 2½-inch size, and correspondingly less in other sizes. The order had the immediate effect of making it impossible for manufacturers to supply hose meeting the standard of Underwriters' Laboratories, Inc. under which thousands of cities have been ordering their hose. At that time orders placed by cities and industrial plants came back from the manufacturers with information that the hose could not be supplied.

As might be expected, Underwriters' Laboratories, Inc., was deluged with inquiries asking: "What shall we do? What kind of hose can we get?" As a result, after considerable experimentation and research the Laboratories developed an emergency alternate specification for fire hose. Manufacturers are now supplying hose built to the new specifications. This is without question the most satisfactory fire hose that it is possible to produce commercially under the WPB restrictions. The new hose will handle equally well as hose meeting the Laboratories' regular specifications which have been in effect for many years. The main difference between the new and the old hose is that the new hose probably will not last as long. Otherwise the performance characteristics remain much the same. Burst pressures for the new hose in 1½-inch, 2½-inch, 3-inch and 3½-inch sizes, double jacketed, remain 600 pounds per square inch.

The Laboratories' EA (emergency alternate) specifications for fire hose contain certain outstanding and unique requirements to assure satisfactory performance. For example, fire hose specifications usually include a life test on the rubber lining of the hose. Such a test is included in the EA specifications but unless supplemented by additional tests, it is not considered conclusive that a proper rubber compound is being used in the hose lining. Because experience has shown that inferior samples can pass the life test, an oxygen bomb aging test is also included in the emergency specifications.

In the oxygen bomb test, samples of the rubber lining are subjected to the action of oxygen at 300 pounds per square inch pressure and at 70 degrees Centigrade (approximately 158 degrees F.) for 96 hours. After this test the tensile strength and the amount a sample will stretch before breaking must be at least 60 per cent of the tensile strength and stretch of samples not subjected to the oxygen bomb accelerated aging test. In checking fire hose submitted to the Laboratories for labeling, the oxygen bomb test is conducted on samples obtained at the factory from each lot of 200 lengths of hose. This means that samples are taken from approximately each batch of compounds made up for fire hose linings.

THE EA specifications also call for elongation, twist, and warp tests. On single jacketed hose the tests are conducted at 300 pounds pressure and the elongation is limited to not more than 12 per cent. On double jacketed hose the test pressure is 400 pounds and the elongation is limited to not more than 8 per cent. These tests are conducted on each length of hose submitted to the Laboratories for labeling.

In each lot of 50 lengths a kink test is made on both the single and double jacketed types and out of each 100 lengths a pressure test is run. The requirements call for resistance to pressures of at least 600 pounds for double jacketed hose, and 450 pounds for the single jacketed.

Hose ordered to the Laboratories' EA specifications will be marked: 1942 UL EMERGENCY ALTERNATE 1942, and: TESTED TO . . . . . LB. (In the blank space will be the test pressure of 300 pounds in the case of single jacketed hose and 400 pounds in the case of double jacketed hose.) Each length will bear the label of Underwriters' Laboratories, Inc.

OCD Issues Regulations for Loans of Equipment to Cities

DIRECTOR James M. Landis, U. S. Office of Civilian Defense, recently issued "Regulations No. 1 Governing Loans of Equipment and Supplies to Civil Authorities." These regulations require each borrowing community to designate a local property officer who will act as custodian of the property and will be responsible therefor to OCD. In addition, state property officers are to be appointed to maintain records with respect to all property loaned in their respective states or areas. In some cases the equipment, which includes fire protection items, may be delivered to the communities through the state property officers. Both state and local property officers will be under the supervision of the regional directors of OCD covering the various defense areas. Both state and local property officers are required to be bonded. The equipment and supplies shall at all times be at the disposition of the United States Government.

Replanning A BURNED TOWN

ONE of the worst conflagrations of last year occurred when wind fanned flames swept across the wooden shingle roofed community of Ocean Bluff in the town of Marshfield, Massachusetts, April 21, 1941. As reported in VOLUNTEER FIREMEN, some 500 buildings covering an area of 56 acres, stretching for nearly a mile along the waterfront were leveled with a loss of more than a million dollars.

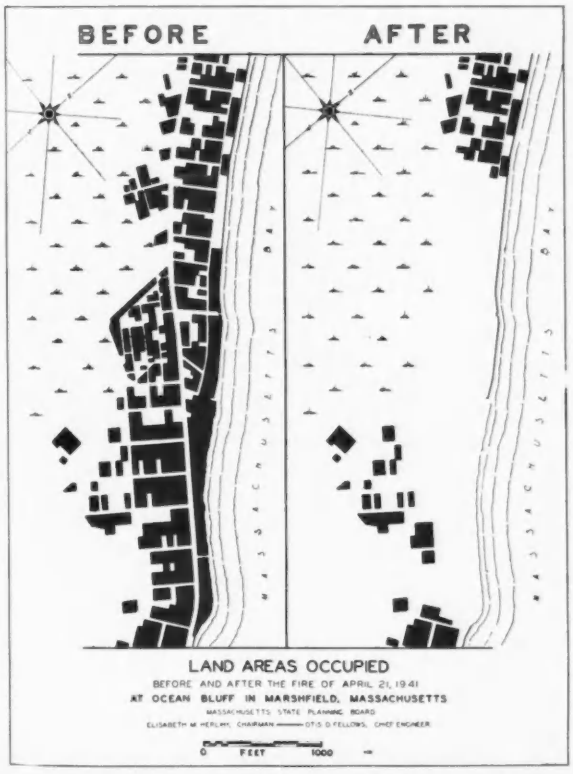
All too often in the past communities have repeated mistakes of bad community planning in their rush to re-build burned areas. However, the citizens of Marshfield were determined that the small shack-like summer cottages largely built on posts or other open foundations, crowded together on tiny lots and mostly having wooden shingle roofs, would not be allowed in the re-built community.

Accordingly, immediately after the fire a rehabilitation committee composed of local citizens and summer residents of the resort sections was appointed by the town Board of Selectmen to prepare a development program for the burned area. Prior to the fire Marshfield had no building code of any sort and zoning requirements were also deficient with many existing building lots consisting of less than 2,000 square feet. Such small lots were evidence of the haphazard growth of the area and were inadequate to permit proper spacing between the typical summer cottages and other frame buildings in the area.

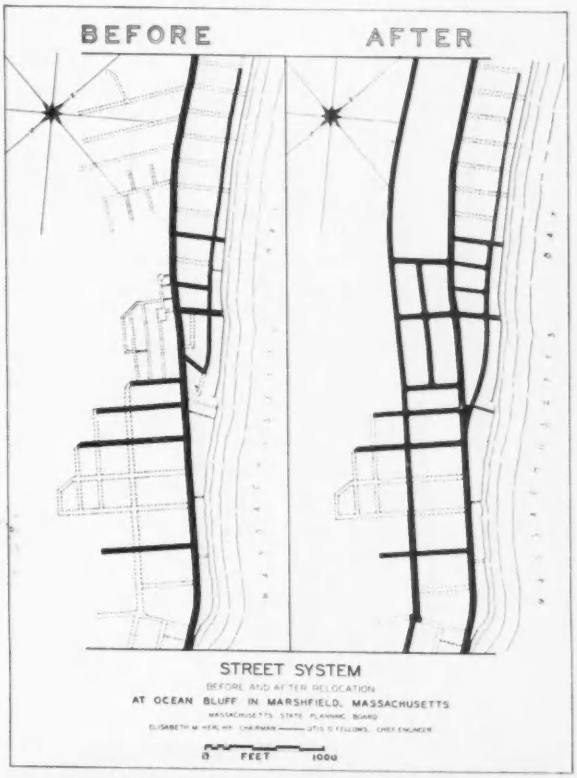
THE rehabilitation committee held meetings with townspeople, property owners and representatives of Federal and State agencies offering technical assistance. The final program, described in a detailed report recently issued by the Massachusetts State Planning Board, embraces a new street plan, amendments to the zoning laws, a plan for the re-arrangement of lots, and building regulations for the summer resort areas that specifically require fire retardant roofing on all new buildings and on old roofs when repairs exceed 25 per cent of the roof area.

To facilitate the re-arrangement of lots in what had been the most congested section of the burned area, the Massachusetts State Legislature passed a special enabling act. This act authorized the Town of Marshfield to buy or to take by condemnation, property adjacent to proposed new streets. It permitted the town to re-adjust lot lines and to sell the new lots to private owners with or without suitable restrictions. The act also authorized the Town to borrow up to $160,000 for taking and improving the area.

Today the Town has taken over an area of about 26 acres. This land has been cleaned, filled and graded. New streets and drains have been installed and larger lots have been laid out. These are being sold back to private parties with preference given to the original owners. In parts of the burned area not taken by the Town private rebuilding is taking place in conformity with new zoning and building laws.


BEFORE
AFTER
LAND AREAS OCCUPIED
BEFORE AND AFTER THE FIRE OF APRIL 21, 1941
AT OCEAN BLUFF IN MARSHFIELD, MASSACHUSETTS
MASSACHUSETTS STATE PLANNING BOARD
ELISABETH M. HERLIHY, CHAIRMAN — OTIS D. FELLOWS, CHIEF ENGINEER
0 FEET 1000

The above map of occupied land areas gives a pretty good idea of the congested Ocean Bluff area before the conflagration last year. The plan at the right shows the clean sweep made by the fire. It is interesting to note that before the fire only one main thoroughfare gave access to the entire area.



As shown by the before and after panels, the street system prior to the fire consisted largely of poorly laid-out and constructed private ways, many of which were narrow and illogically located. The solid lines denote the public street system which has been expanded since the fire.

Suggestions for Instructors of Auxiliary Firemen

FIRE department officers and instructors in all parts of the United States and Canada are faced with the task of making proficient auxiliary firemen out of civilians who have had no previous fire fighting experience. This is a job that calls for patience, tact, and some knowledge of teaching technique. Accordingly, the following suggestions for instructors of auxiliary firemen, as recently issued by the branch office of the Kansas State Board for Vocational Education at Pittsburg, Kansas, should prove helpful.

Prepare a definite plan for each meeting well in advance.

Be sure that each evolution to be instructed has been *broken into small steps or operations.* An evolution may appear to be only one motion to an experienced person. To the learner it may need to be broken down into four or five.

A single instructor should not attempt to handle a large group since interest will be lost very quickly if men are required to watch others practice for long periods without being able to participate.

Keep everyone busy, both mind and hand if possible, but keep the mind busy even when the hand must be idle.

When the lesson involves an evolution that requires teamwork, regular firemen should be brought in to assist instructor with the demonstration.

The "assistant instructor" method used at the Annual Fire College may be used to handle larger groups if it is impossible to assign a regular instructor to a small group of auxiliary firemen.

One evolution per night coupled with review drill may be sufficient.

Make use of blackboard when giving information.

Cooperation of entire fire department is necessary. If other firemen point out to auxiliary firemen that there are other ways to perform the evolutions, the purpose of the program will be defeated. The chief of the department will need to establish a policy to be followed in this important matter.

Break long evolutions such as removing ladder from rig, carrying to location and raising, into shorter evolutions.

Don't read to class except as a means of emphasizing what you have already explained.

Motion pictures are good tools of instruction if the instructor previews the film to enable himself to give an introductory discussion before showing to the class. Discussion or practice should follow the showing if there is information or skill in performing evolutions to be gained from the film. A second and third showing are often justified. Special points should be watched for during these showings.

Encourage members of class to make a record of valuable information. If instructor cannot make a blackboard outline, it is doubtful if the information is worth presenting.

Show the thing itself if possible; if this can't be done, show a picture; if no picture is available, use a diagram or sketch. Don't attempt to describe a thing in words alone. Use these visual aids.

Make the pupil actively participate; don't merely describe or show when you can get the pupil to take part. He will get more out of the learning process where he helps himself than where he is handed the information.

Stick to one step at a time in the teaching process. Each step is a teaching job and the smart instructor will tackle only one job at a time.

Use actual equipment in giving instruction on evolutions.

Use no technical terms with which the pupil is unfamiliar.

Teach the pupil only as much at a time as he can hold. Too large a lesson will only confuse and discourage the learner.

Clinch each teaching point before going on to others that may depend upon what has been taught previously.

Be sure the learner knows what he is going to learn to do.

Provide adequate drill. "Practice makes perfect."

Insist on every pupil doing the job right.

Be on hand 15 minutes ahead of time.

Teach only one method of doing a job.

Avoid embarrassing any individual.

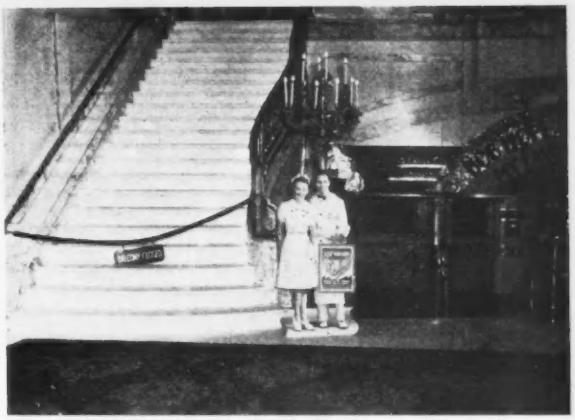
Aim to be patient under all circumstances.

Use of the question, "Do you understand?", doesn't get reliable answers. Ask such questions as "What do you do first?", "Why do you do this?", etc.

Don't "rush" a lesson.

Giving a fire prevention message "sex appeal" is accomplished with these attractive cut-out figures. This innovation in fire prevention salesmanship has been introduced by Fire Marshal Louis G. Schraffenberger of the Cincinnati Fire Department.

This view shows how one of the cut-out figures shown on the previous page are used as the central item of a fire prevention display in the window of a vacant store in Cincinnati.



The lobby of a motion picture theatre also makes an excellent place to utilize interesting cut-out figures to tell a fire prevention message.

Don't "drag" a lesson.

People learn more rapidly when "telling" and "showing" are combined in putting across a lesson.

Don't lecture more than 15 minutes at a time. If most of the lesson must be of information type, break the monotony by use of discussion.

Use as nearly actual situations as possible in training. For example, ladders should be set up against exterior walls, knots should be tied where used.

Firemen's Training a "Must" in Wartime

NEVER have firemen's training programs been of more importance than at the present. Fire departments, in many cases undermanned and unable to get adequate equipment due to war conditions, face the tremendous task of protecting vital war materials from destruction by fire. The highest degree of efficiency that can be obtained through adequate training is necessary. The training of numerous auxiliary firemen is an additional responsibility. Most of the fire schools and fire colleges held this year are featuring wartime items on their programs. Here are some of the schools that already have been held or that are scheduled for 1942.

Arkansas. Chief Carl S. Smalley has returned to his duties as State Fire Instructor after a seven-month leave of absence during which he helped to organize a fire brigade at the Lone Star Ordnance Plant at Texarkana, Texas. Coincident with Mr. Smalley's return fire schools in salvage and overhaul practices were scheduled at Harrison, Fort Smith, Texarkana, El Dorado, and Monticello.

Connecticut. Last month the second annual Fire College was held in New Britain. Civilian defense and auxiliary firemen's training were the major topics at the two-day session.

Georgia. The 8th Georgia State Fire College was held at Atlanta May 13-15.

Illinois. The 18th Illinois Fire College was held June 16-19, at the University of Illinois, Champaign-Urbana.

Indiana. The ninth Indiana Fire School was held at Purdue University, Lafayette, Indiana, June 11-12, 1942.

Kansas. The Kansas State Firemen's Association during their annual convention in May voted to adopt the Fire Service Training Texts compiled by the Oklahoma A. & M. College as the official firemen's training manual for Kansas. Kansas is thus the 12th state to adopt these standard training texts.

Members of the Kansas Fire School Committee recently decided that the 13th annual Fire College will be held at Kansas University, September 8-11. The program will include considerable amount of civilian defense training.

Kentucky. The Firemen's Educational Committee in Kentucky, composed of representatives of the State Department of Fire Prevention and Rates, the Kentucky Municipal League, the Kentucky Firemen's Association, the University of Kentucky, and the Kentucky Actuarial Bureau, have arranged for fire school on the campus of the University of Kentucky at Lexington, July 28 to 31, inclusive. This will be the fifth year that a state fire school has been held.

Louisiana. Sixty-one firemen and soldiers attended the 5-day sessions of the 13th Annual Fire College held during May at Baton Rouge under the direction of Chief Robert A. Bogan. The instruction was largely in war techniques for the protection of both civilian and military establishments.

Michigan. C. A. Fisher, Director, Extension Service, University of Michigan, has announced that the 14th annual Michigan State Fire College will be held at Ann Arbor, July 14-17. The Fire College is open to all Michigan firemen, whether volunteer or paid, and to city officials and other persons interested in the fire service.

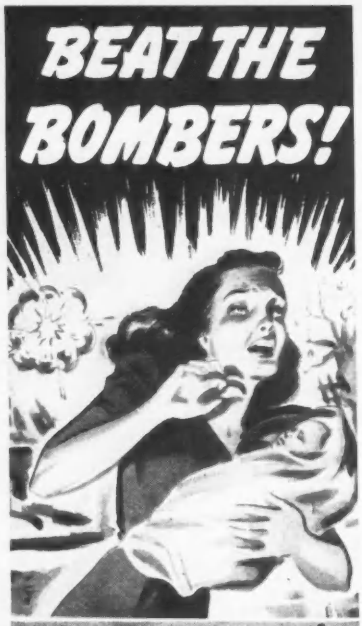
Nebraska. More than 1100 volunteer firemen representing 246 of the 524 incorporated cities and villages in the state attended the nine fire schools held in April by the State Fire Prevention Bureau and the League of Nebraska Municipalities.

New Mexico. The 13th Annual Fire School was held at Las Vegas, June 8-10. Host to the fire school was the E. Romero Hose and Fire Company, one of the oldest volunteer departments in the state.

Pennsylvania. The Fourth Annual Firemen's Training Conference will be held at State College, Pennsylvania, during the week of August 31 to September 5, 1942.

Texas. The 13th annual session of the Firemen's Training School was held at Texas A. & M. College, College Station, May 17-22. The program centered around fundamental training for civilian defense. The total number of firemen registered at the school was 431 from 258 cities and towns. Of these, 382 firemen took the general defense course and 49 firemen took a lay-instructors' first aid course for men who had completed the standard first aid course.

Ontario. Regional firemen's training schools were held at Queen's University, Kingston, Ontario, April 23-24, and at the University of Western Ontario at London, May 7-8, under the joint auspices of the Dominion Association of Fire Chiefs and the Ontario Fire Marshal's Office.



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Is Your Department Ready to Make Use of OCD Equipment?

FROM many sections of the United States, and particularly from coastal areas, city and town officials have frequently been heard to complain because they have not received emergency fire defense equipment from the Federal government. Many of these same complaining officials are the persons who last year when fire apparatus factories were in a position to make prompt deliveries, ruled that their fire department's old 1921 pumper was "good for another ten years yet." Complaints about delays in securing emergency fire equipment do not take into account the magnitude of the task of procuring and distributing nearly $100,000,000 worth of defense equipment during wartime when virtually all essential materials must be earmarked for the armed forces.

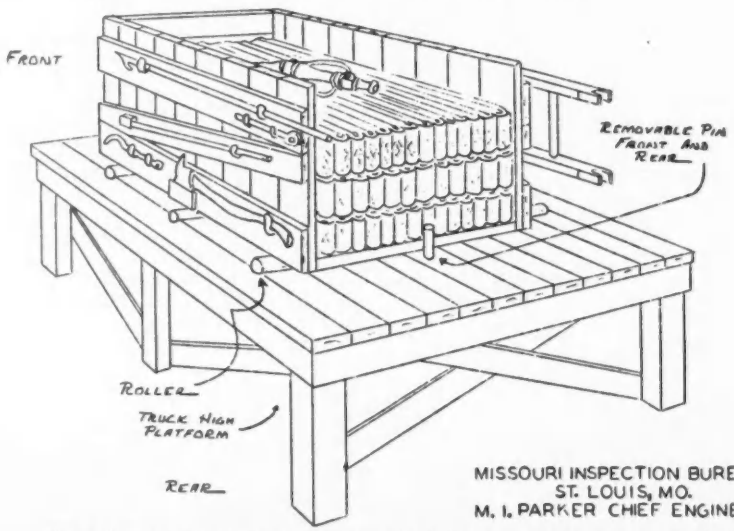
Due to War Production Board restrictions necessitated by shortages of critical materials, it has not been possible to go to fire equipment manufacturers with orders for hundreds of standard pumping engines or miles of regular fire hose for civilian defense purposes. Instead OCD officials were forced to start from scratch and design new emergency pumping units, fire hose, extinguishers, and other items that will call for little or no critical materials but at the same time will do a creditable fire fighting job in the hands of auxiliary firemen and other defense workers.

Specifications for emergency fire equipment were developed with the cooperation of the OCD fire defense advisory committee, the work of which has been previously reported in VOLUNTEER FIREMEN.

OCD officials have several times pointed out that local communities also have certain responsibilities to attend to if they want to get OCD equipment as soon as it is available. For example, one requirement that must be met before any of the OCD auxiliary pumpers will be distributed is that the local communities must provide appropriate vehicles on which the pumping unit and equipment will be mounted. Such vehicles must be provided at the expense of the community. In other words the local fire department must have trucks available to make use of OCD pumping units whether these are of front-mounted, skid-mounted, or trailer types. Fire departments expecting to obtain auxiliary equipment should lose no time in lining up some appropriate motor vehicles as war conditions have made it impossible for OCD to provide any self-propelled trucks or chassis.

Another essential preparation for making use of OCD equipment is to have properly trained crews ready to take over the apparatus when it is delivered. If fire departments have al-

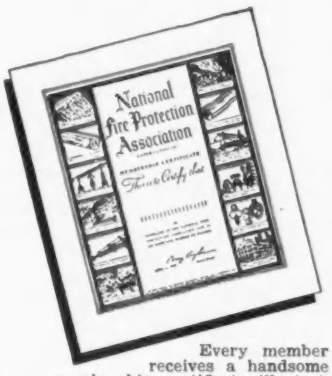
PORTABLE HOSE CARRYING BOX



MISSOURI INSPECTION BUREAU
ST. LOUIS, MO.
M. I. PARKER CHIEF ENGINEER

The problem of how to keep spare hose loaded for emergency service at all times is solved by the above hose box suggested in a report of the Fire Defense Committee of Missouri. Hose is loaded in a standard manner in the box which has other essential fire fighting tools mounted on the outside. When extra hose is needed in a hurry, either for large fires or for air raid defense, any available truck with a suitable body is backed into the fire station and the load is rolled from the platform on to the truck which is thus quickly converted into a hose truck. The hose box should be sturdily constructed to resist strains that may come when in use with a heavy hose load. It may be necessary for the box to have additional bracing than that illustrated above. Incidentally, a somewhat similar arrangement might be made for utilizing any skid-mounted pumping units that may be made available to the department.

JOIN THE N.F.P.A.



Every member receives a handsome membership certificate illustrating the history of fire protection.

N.F.P.A. membership is available to fire companies and fire departments through the Volunteer Firemen's Section of the National Fire Protection Association. Here's the simple plan:

MEMBERSHIP in the National Fire Protection Association costs $10 per year. The Volunteer Firemen's Section is designed to give each fire company the advantages of N.F.P.A. membership.

• As a member, the fire company receives at its headquarters a complete set of all regular N.F.P.A. publications. This includes the official *Quarterly* magazine, as issued.

• As a special service to the Volunteer Firemen's Section, each member fire company is entitled to have copies of the monthly magazine VOLUNTEER FIREMEN sent to the home addresses of 10 firemen.

• If more than 10 firemen want to receive the magazine, an additional $1.00 should be sent in with the membership fee for each fireman in excess of 10 enrolled. Because of the large amount of material mailed to members, not less than $10 can be accepted from any company.

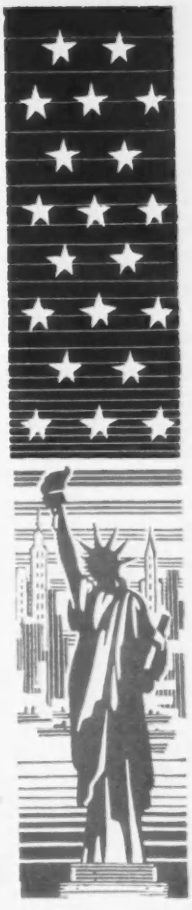
lowed their auxiliary firemen to use the regular fire department apparatus for training while awaiting delivery of OCD equipment, they will have crews ready to use emergency equipment as fast as it becomes available. Director Landis of OCD in his address before the N.F.P.A. Annual Meeting at Atlantic City in May, made it clear that he considered that any fire department which failed to train its auxiliaries with regular equipment until the auxiliary apparatus arrived, was negligent and was failing in its duty to its citizens. This does not imply that regular fire department equipment, which may be hard to replace, should be turned over to the auxiliaries to use indiscriminately, but rather that fire department officers and instructors should not hesitate to use regular equipment in training auxiliaries under their control.

In the nearly seven months since Pearl Harbor there has been time for every fire department to develop a good auxiliary force having sufficient basic training to make it useful in an emergency. Departments having such auxiliary forces will be ready to make use of the auxiliary fire fighting equipment as fast as it becomes available. Of course, it stands to reason that regular fire company members must have training at least equal to what the auxiliary members are getting. Care must be taken not to sacrifice the regular fire company drills due to the problem of training needed auxiliaries. After all, the auxiliaries are the helpers for the regular firemen and the training program for each department should be developed with that fact in mind.

Illinois Defense Council Plans Rural Fire Protection

IN an effort to reduce Illinois' rural fire losses which amounted to $2,500,000 last year and which are depriving the nation of vitally important farm products, the Illinois State Council of Defense through its Civil Protection Division has formulated a rural fire prevention plan. The plan which is to be the responsibility of John H. Craig, State Fire Marshal and State Fire Coordinator, aims at the prevention of fires in homes, farm buildings, woods, fields, and crops.

Under the plan, each county defense council has been asked to appoint a rural fire protection committee. The county committees are to appoint a fire warden in each rural school district. The district wardens in turn will appoint farmers in all sections of their districts to aid in the work of preventing and suppressing fires.



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"Sweet Land of Liberty"

4th of July finds the fire protection agencies of the Nation faced with a responsibility far surpassing that of previous years. In preparing for sabotage and grass fire fighting please bear in mind the outstanding advantages of

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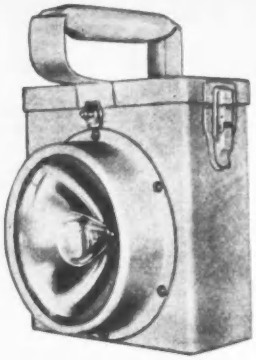

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PYRENE PRIZE LETTER CONTEST

EVERY month the above cash prizes are paid out to firemen whose letters contain the best stories. Persons not holding membership in a fire company, brigade, or department, cannot enter this contest which is limited to firemen. More fires are put out with fire extinguishers than by any other means.

Incidentally, the summer months are a good time to try your hand at sending in a letter to the Pyrene Prize Letter Contest. If you know of an interesting case where approved extinguishers put out a fire just jot down the story and send it in to the N.F.P.A. office.

Any approved extinguisher has an equal chance in the contest. The stories reported in this contest show the value of having an extinguisher handy. It's the story we want, not letter writing ability. Get the facts down on paper and we will attend to any rewriting necessary to get the story into the space available in these columns.

The contest is sponsored cooperatively by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN to bring forth the lessons learned from actual fires of the value of fire extinguishers for both holding large fires in check and putting out numerous small blazes.

•

FIRST PRIZE—$10.00

HOWARD A. COLE, *Foreman*
Seeley Hose Co.
Canisteo, N. Y.

Saved for the War Effort!

While drawing shavings from a local sawmill, I heard the cry of "fire!" Oil from a nearby tractor had ignited in a pile of dry shavings and dust and had gained a considerable start. Flames were endangering the tractor as well as the mill. I immediately grabbed a quart size carbon tetrachloride extinguisher and began to play it on the base of the fire, while other workers brought up a 2½-gallon loaded stream extinguisher which I used after exhausting the carbon tetrachloride extinguisher. In five minutes the fire was out with no damage to the tractor or mill, thus saving thousands of dollars in lumber and machinery for Uncle Sam's war effort.

SECOND PRIZE—$3.00

TOM BARROW
Volunteer Fire Department
Denton, Texas

Dry Cleaning Plant Fire

One busy morning dust and lint ignited in the exhaust pipe of the tumbler machine which I operate at the dry cleaning plant where I work. As the tumbler machine which removes naphtha from clothes was filled with clothes, I knew that I must prevent the fire which was already blazing to the ceiling from spreading. Taking a 2½-gallon soda acid fire extinguisher I emptied the contents on the flames in the exhaust pipe before the naphtha-saturated clothes in the tumbler caught fire. By quick action I was able to put out the fire without any damage to building or clothes.

THIRD PRIZE—$2.00

F. E. SHOKES, *Battalion Chief*
Charleston, S. C. Fire Department

Small Damage Resulted

One afternoon last summer an engine Company from Station 4 responded to an automobile fire, which had apparently been caused by a short circuit under the instrument board. Realizing the effectiveness of carbon tetrachloride on electrical fires, the lieutenant in charge ordered that a carbon tetrachloride extinguisher be played on this fire. Only about a pint of this liquid was used from quart size extinguisher in putting out the blaze, with very small fire damage to the automobile.

CONTEST RULES

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.
2. Letters are to describe actual experiences where an approved fire extinguisher of any make has saved lives or property.
3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.
4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.
5. Only one letter may be submitted each month.
6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.
7. Letters received after the 8th day of the month will be judged in following month's competition.
8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.
9. Address contest letters to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

NEW TEXTS

Chemical Warfare and the Chemical Warfare Service, 36 pages, price 30 cents, is obtainable from the Book Department, Chemical Warfare School, Edgewood Arsenal, Maryland. The booklet, written in non-technical language, contains more than thirty illustrations and diagrams including a colored sectionalized view of a gas mask cnister and a colored chart showing chemical warfare agents.

A Fire Officers' Manual for Training a Fire Department Auxiliary Corps prepared under the supervision of Gilbert G. Weaver, Supervisor, Industrial Teacher Training, State Education Department, New York City, is available from The Hamilton Company, 225 Lafayette Street, New York, N. Y., at a cost of $2.00 per copy. The material in this manual is the result of an instructor training course offered by the Teacher Training Division of the New York State Department of Education upon the request of the New York Fire Department. The manual contains thirty lessons selected by New York City fire department officials. The contents of the thirty lessons was analyzed and organized by fire officers attending the training course.

The Indiana State Defense Council at Indianapolis recently issued the 3rd revision of its manual entitled "Civilian Defense in Indiana." This 170 page volume describes the functions of the canister and a colored chart showing agencies engaged in civilian defense.

TRADE ANNOUNCEMENT

View of the new Mul-T-Jet nozzle tips for use on standard fire fighting nozzles, sold by the Mul-T-Jet Nozzle Corp., 11 West 42nd Street, New York, N. Y. These tips are molded of shatterproof plastic. The water is cut into tiny streams that cross one another to break up into a fine spray, producing artificial fog at average nozzle pressures.

TRADE MARK
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Specialists in Public Safety

Manufacturers of Emergency Signaling Systems

FIRE ALARM
POLICE SIGNALING
AIR RAID WARNING
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AUTOMATIC FIRE DETECTION

Two thousand municipalities, several thousand industrial plants and many of the largest institutions now use Gamewell Systems for the protection of life and property and to ensure the permanency of established business.

We freely cooperate in planning protective Signaling Systems.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS, MASSACHUSETTS

A Model Records and Reporting System for Fire Departments

Size of book, 8½ x 11 inches
87 pages, 27 forms, 7 figures
Price, $2 each, postpaid

This manual suggests a detailed and well-rounded plan that should help to solve many of the problems that now confront fire chiefs in small as well as large cities and towns. It shows how a records and reporting system should operate. It includes copies of the 27 forms considered important in fire department work.

The record forms contained in this book have met with such acceptance by fire chiefs and fire departments that most of the forms have now been separately printed to meet the demands of departments wishing to purchase supplies of the blanks. Write for a price list for the various record forms. If your department has not yet obtained a copy of the Model Records and Reporting System book ask for a circular describing it so that you will have full information on the many reporting blanks available.

PUBLIC ADMINISTRATION SERVICE
1313 East Sixtieth St.
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duGas

The Master of Flame

The economical, efficient first-aid protection against sudden, extra-hazardous fires.

Wherever dangerous fires break out in flammable liquids, gases under pressure, vital electrical installations, duGas is always ready, certain and fast. DuGas hand and wheeled extinguishers are available in a variety of sizes.

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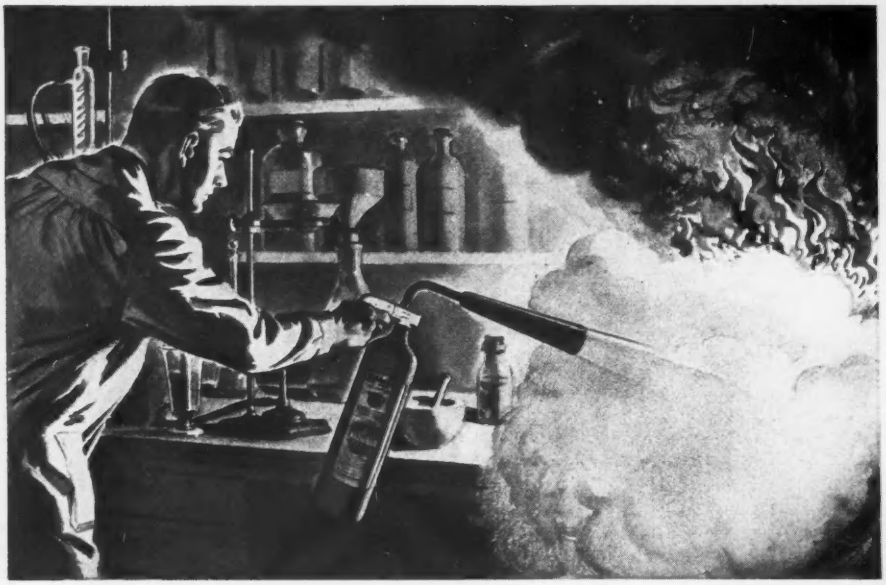
FIRE AND HOW TO FIGHT IT!



PULL THE TRIGGER—*KILL THE FIRE!*

Here it is! . . . the fastest-action, easiest-to-operate fire-killer you ever saw!

There's a pistol grip for one-handed action and for quick maneuverability. There's a trigger-control for fast, easy discharge. A finger's touch discharges the unit. Only Kidde has these sensible, simple features.

You can get Kidde trigger-control extinguishers with 2 or 4 lbs. of carbon dioxide capacity. Use them against flammable liquid or electrical fires. Hang Kidde units in laboratories and garages, near work benches and on your trucks. When fire strikes, Kidde snuffs it out fast in a flurry of carbon dioxide snow-and-gas. Just *aim . . . shoot . . . kill the blaze!*

Think this over: Newly-hired workers may not know how to handle some industrial-type extinguishers in emergency. ***But anyone knows how to pull a trigger!***

Kidde

Walter Kidde & Company
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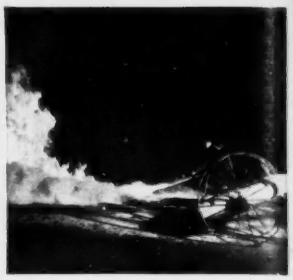
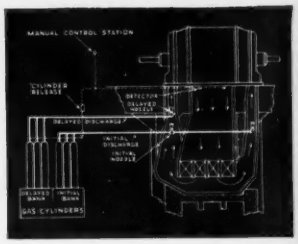


WHEELED FIRE-FIGHTERS

Easy portability combines with big fire-fighting capacity in the heavy-duty Kidde Wheeled Units. With carbon dioxide capacities of 50, 75 and 100 lbs., these big extinguishers handle fires too tough for hand-models. Each Kidde Wheeled Unit is equipped with a long hose and has a specially designed nozzle for prompt fire-control. Located at the grip is a valve handle which enables the fire fighter to control the discharge as he attacks the blaze.

Kidde Wheeled Units are widely used to protect outdoor hazards and to guard large machinery, difficult processes.



GUARD ELECTRICAL MACHINERY

Do you know about *built-in* protection of electrical equipment? Do you know how to kill fire *automatically* in generators and other rotating machines? You can handle this job with Kidde Built-in Systems.

For control rooms, transformer vaults, get a total-flooding Kidde installation. Kidde carbon dioxide snow-and-gas is safe, even on "live" equipment. Too, Kidde confines damage to that done by fire itself. Underwriters give full approval to Kidde portables and Kidde Systems for use against electrical fires.

"NO SMOKING" MEANS *NO SMOKING*

Courts are handing out stiff fines and jail sentences to workers who violate smoking rules in defense plants. Unions are cooperating, too. National Fire Protection Ass'n warns that restrictions should at all times be *reasonable*. Often safe areas may be designated as O.K. for smoking. Best rule is—insist on strict observance whenever safety is threatened.

RED MEANS DANGER

When fire breaks out, extinguishers must be ready for action. Built-in electrically operated Kidde Systems may be equipped with tell-tale panel to indicate if unit has been discharged or maliciously disabled. Panel has one green, one red light. *Green* light shows Kidde System "ready and waiting". *Red* means System has been released, must be recharged.

DO YOU LIKE STATISTICS?

N.F.P.A. reports fire loss for last 25 years totals *over $10 billion.* 1941 total is an estimated 5% increase over 1940. Ten-year trends are much more encouraging. In the period 1922-31 annual *average* loss was $506 million! During last 10 years we cut these figures to annual average of $284 million. *This wasted money buys 1100 medium bombers!*

THIS ADVERTISEMENT IS ONE OF A SERIES APPEARING CURRENTLY IN INDUSTRIAL PUBLICATIONS.